REMARKS

Claims 1-19 are pending. In the Office Action dated April 1, 2008, the Examiner rejected claims 1-2, 8-10, 15 and 17 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,828,468 to Lee *et al.* ("Lee") and rejected claims 3-7, 11-14, 16 and 18-19 under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 6,654,787 to Aronson *et al.* ("Aronson"). In view of the following remarks, reconsideration of the present application is respectfully requested.

The disclosed embodiments of the invention will now be discussed in comparison to the prior art. Of course, the discussion of the disclosed embodiments, and the discussion of the differences between the disclosed embodiments and the prior art subject matter, do not define the scope or interpretation of any of the claims. Instead, such discussed differences are intended to provide assistance to the Examiner in appreciating the claim distinctions discussed thereafter.

The disclosed example of the invention is a method and apparatus for detecting a spoofed network connection. In particular, embodiments of the invention are useful for detecting possible spoofed SMTP connections as are typically employed by spammers. Specifically, spammers spoof their IP address during SMTP connections to avoid having their spam traced back to them. In a typical scenario, a spammer will connect to an SMTP server using a spoofed IP address. The SMTP server responds with a greeting and that greeting is sent to the spoofed IP rather than to the actual IP of the spammer's machine. Even though the spammer doesn't receive the greeting (since it was sent to a different IP address), the spammer nevertheless continues communications with the SMTP server *as if they had* received the greeting. Due to limitations in the SMTP protocol, there is no means of verifying or ensuring that the spammer actually received the greeting and therefore detecting that a spammer has connected is more difficult.

In an embodiment of the invention, the scenario outlined above is changed to permit detection of a spoofed connection. In particular, embodiments of the invention will delay sending the greeting for some predetermined period of time after the connection has been

established. For example, suppose a bona fide client connects to the SMTP server. After connecting, an embodiment of the invention would delay sending the greeting to that client for a period of time. For example, the server could wait 5 seconds before sending the greeting. Since the client is bona fide, the client has no reason to further communicate with the SMTP server until such time as they receive the greeting. Once they receive the greeting, the session continues as per normal.

On the other hand, suppose a spammer connects to the SMTP server using a spoofed IP. After connecting, an embodiment of the invention likewise delays sending the greeting for a period of time. After this period of time has lapsed, the SMTP server sends the greeting. However, since the spammer has connected with a spoofed IP, the greeting will be sent to the fake IP instead of to the spammer. Since the spammer will not and cannot receive the greeting, they simply continue the SMTP session *as if they had* received the greeting. Typically, the spammer will continue the session as soon as possible right after initiating the connection to save time and to permit sending as many spam emails as possible. In this scenario, therefore, the spammer will continue with the SMTP session and communicate with the server even before the server has sent the greeting (due to the server purposely delaying transmission of the greeting). Embodiments of the invention recognize that receipt of this communication prior to transmission of the greeting is a near certain sign that the connection is using a spoofed IP. Embodiments of the invention may then proceed based on the assumption that the spoofed connection is probably a spammer and take certain other actions as are described in detail in the specification.

The Lee reference discloses methods and systems for managing a facsimile ("fax") session over a digital data link and includes a spoofing operation where necessary. As is well known in the art, fax machines are designed to communicate with one another via analog telephone lines. Modernization of telephone networks has created situations where intermediate links between two fax machines may be, and typically are, digital links. Lee discloses a system whereby a source fax machine is connected to a destination fax machine through two intermediate digital points of presence (POPs). Basically, the source machine connects to a source POP via normal analog voice telephone lines, the POP translates the analog fax transmission to digital data, the data is sent through the digital network to a destination POP that

is connected to the destination fax machine and that translates the digital data back into the analog fax transmission that is received by the destination machine.

As with virtually all forms of data transmission, fax transmissions follow a certain protocol. Prior to sending the actual fax data to a destination fax machine, the source fax machine must first send a request to send to the destination machine and will wait for an acknowledgment from that machine prior to sending the fax data. The request and acknowledgement travel through the POPs and digital network just the same as the fax data itself. Lee discloses a system whereby the source POP will determine a maximum permissible time to wait for receiving the acknowledgement from the destination fax machine and if that time is exceeded, the POP will send a fake acknowledgement to the source machine thereby permitting the source machine to commence with transmission of the fax data. This "spoofing" of the acknowledgement permits the source fax machine to begin transmitting analog data to the source POP allowing the source POP to begin conversion of that data to digital data and, perhaps, buffering the converted data for subsequent transmission to the destination POP. If an actual acknowledgement is subsequently received by the source POP as relayed to it by the destination POP, then the buffered data may be transmitted to the destination POP for translation and retransmission to the destination fax machine. It is important to note that although Lee discloses using a spoofed message to control a fax session, it does not disclose or fairly suggest detecting a spoofed message or connection.

Turning now to the claims, Lee fails to teach of fairly suggest elements of independent claims 1, 8 and 15 thereby precluding *prima facie* anticipation or obviousness as is discussed in detail below. Applicants respectfully request, therefore, that the rejections be withdrawn.

Claim Rejections Under 35 U.S.C. § 102

A. Claims 1-2, 8-10, 15 and 17 are rejected under 35 U.S.C. § 102(b) as being unpatentable over U.S. Patent No. 5,828,468 to Lee *et al.* ("Lee").

Independent Claim 1 (Dependent Claims 2-7)

Independent claim 1 is directed towards a method for detecting a spoofed network connection that includes "receiving a connection from a client" and "delaying sending a greeting message for a delay period." The Office Action does not describe with any particularity what, exactly, the Examiner contends is "receiving a connection." Based on the extensive portion of the Lee disclosure that was cited in the Office Action, the Examiner may argue that either of the two POPs or the destination fax machine may be construed as "receiving a connection." Whichever of these the Examiner may wish to construe as "receiving a connection," it is clear that Lee does not teach or fairly suggest any of these "delaying sending a greeting message for a delay period." Applicants respectfully submit that column 3, lines 13-57 of the Lee reference is completely silent as to "delaying sending" any type of data whether a "greeting message" or otherwise. Likewise, the remainder of Lee fails to teach or fairly suggest "delaying sending a greeting message."

Independent claim 1 also includes the method step of "monitoring the connection during the delay period." Lee fails to teach or fairly suggest such "monitoring the connection during the delay period" at least because it fails to teach "delaying" and hence it cannot teach an associated "delay period."

Independent claim 1 also includes the method step of "identifying the connection as the spoofed connection" if a command is received from the client before the greeting is sent. As was discussed above, Lee discloses transmitting a spoofed acknowledgement to the source fax machine under certain circumstances. Lee does not, however, teach or fairly suggest "identifying the connection as the spoofed connection" at least because a) a spoofed acknowledgement is not equivalent to a "spoofed connection" and b) *using* such a message is not equivalent to "identifying" a "spoofed connection."

Accordingly, for the reasons set forth above, Applicants respectfully request that the rejection of claim 1 be withdrawn. Claims depending from claim 1 are also patentable based on the patentability of the base claim and further in view of their additional limitations.

Independent Claim 8 (Dependent Claims 9-14)

Independent claim 8 is directed towards a method for detecting a spoofed network connection that includes "receiving a first command at a server from a client" and "delaying [] a transmission of a reply." As discussed above, it is not clear what part of Lee the Examiner contends is, for example, "a server" or "a client." Even if some or all of the POPs and fax machines are construed to act as a "server" or a "client," it is clear that Lee does not teach or fairly suggest any of these "delaying [] a transmission of a reply" Applicants respectfully submit that column 3, lines 13-57 of the Lee reference is completely silent as to "delaying [] a transmission" of any type of data whether a "reply" or otherwise. Likewise, the remainder of Lee fails to teach or fairly suggest "delaying [] a transmission of a reply."

Independent claim 8 also includes the method step of "monitoring a connection between the server and the client during the delay period." Lee fails to teach or fairly suggest such "monitoring" at least because it fails to teach "delaying" and hence it cannot teach an associated "delay period."

Independent claim 8 also includes the method step of "identifying the connection as the spoofed connection" if a second command is received from the client before the reply is transmitted. As was discussed above, Lee discloses transmitting a spoofed acknowledgement to the source fax machine under certain circumstances. Lee does not, however, teach or fairly suggest "identifying the connection as the spoofed connection" at least because a) a spoofed acknowledgement is not equivalent to a "spoofed connection" and b) *using* such a message is not equivalent to "identifying" a "spoofed connection."

Accordingly, for the reasons set forth above, Applicants respectfully request that the rejection of claim 8 be withdrawn. Claims depending from claim 8 are also patentable based on the patentability of the base claim and further in view of their additional limitations.

Independent Claim 15 (Dependent Claims 16-19)

Independent claim 15 is directed towards an apparatus for detecting a spoofed network connection that includes a "detecting" means for detecting when a connection is established between the apparatus and a client device. The apparatus also comprises a "transmitting means" and a "means for delaying the transmitting means [] during a delay period." As discussed above, it is not clear what part of Lee the Examiner contends is equivalent to the claimed apparatus or the "client device." Even if some or all of the POPs and fax machines are construed to act as the apparatus or a "client device," it is clear that Lee does not teach or fairly suggest any of these "delaying the transmitting means [] during a delay period." Applicants respectfully submit that column 3, lines 13-57 of the Lee reference is completely silent as to "delaying [] the transmitting means" from transmitting any type of data whether a "reply," a "greeting message" or otherwise. Likewise, the remainder of Lee fails to teach or fairly suggest "delaying [] the transmitting means [] during a delay period."

The apparatus of independent claim 15 also includes a means of "monitoring the connection to detect commands [from] the client device at least during the delay period." Lee fails to teach or fairly suggest such means for "monitoring ... during the delay period" at least because it fails to teach means for "delaying" and hence it cannot and does not teach an associated "delay period."

Accordingly, for the reasons set forth above, Applicants respectfully request that the rejection of claim 15 be withdrawn. Claims depending from claim 15 are also patentable based on the patentability of the base claim and further in view of their additional limitations.

Claim Rejections Under 35 U.S.C. § 103

A. Claims 3-7, 11-14, 16 and 18-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of U.S. Patent No. 6,654,787 to Aronson *et al.* ("Aronson")

Independent Claims 1, 8 and 15

Independent claims 1, 8 and 15 are patentable over Lee in light of the remarks above. Aronson fails to teach or fairly suggest any of the limitations not taught by Lee. Therefore, based on the patentability of base claims 1, 8 and 15, Lee in view of Aronson is inadequate to establish a *prima facie* case of obviousness for dependent claims 3-7, 11-14, 16 and 18-19 and Applicants respectfully request the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-467-9600.

Respectfully submitted,

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Date

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